

## **Capstone Theme: BIOLOGICAL STRESS**

**Your Capstone Mentor: Dr. Romi L. Burks; @ProfRomi**

**Professor of Biology**



**Semester Class Time:** 8:35– 9:35 am IN PERSON, Tuesday and Thursdays, Cullen 330

Permanent Online Google Meets Link: <https://meet.google.com/vbo-zpzz-aua>

**Office:** Fondren Jones 212 but I'm pretty much working from home. Cell 512-869-8098

**Office Hours:** Available most of the week - quite flexible -just let me know.

**Email:** burksr@southwestern.edu Webpage: [www.profromi.com](http://www.profromi.com)

**Cell Phone:** 512-869-8098 (avoid calls before 8 a.m. or after 10 p.m. unless emergency)

**About this Course:** The Biology Capstone is a course for senior biology students, in which you investigate advanced topics in biology, integrating the concepts and knowledge you have gained from previous courses taken in the major. This can take the form of a literature review or a research paper based on the student's collaborative research with a faculty. In this capstone literature review seminar (994), we will explore the theme of stress. For humans, I can define "stress" as a response to physical, mental or emotional pressures. For living organisms at large, stress refers to a pressure that reduces growth and/or reproduction (i.e. ultimately resulting in a decrease in fitness). Beyond individuals, habitats and ecosystems also suffer from stress. Casually in ecology, stress encompasses everything that doesn't kill the subject (in contrast to disturbance). One can quantify stress. It has identifiable characteristics as well as broad impacts. Stress affects everything and depends

on so many things. While clearly definable, stress extends beyond a single definition and exists on a continuum. Understanding the term stress requires differ specifying the source, scale, response and impact.

**For BIO50-994 students, it will be your capstone objective to connect your own interests in biology to this theme in a thoughtful literature review.** As a part of the seminar, each of the 994 students will write a focused literature review on stress and give an oral presentation about their findings. Students will help create a conceptual framework about stress, contribute to peer discussions of research papers, review for the MFT and reflect on their overall experience as a biology major as well as within the Paideia philosophy..

### **COVID-19 PRINCIPLES Semester 3**

1. Still nobody signed up for this. Not for the sickness, the social distancing, the considerable alteration of our collectives' lives on campus and the continued reliance on teaching and learning remotely, learning from home, mastering new technologies, and varied access to learning materials.
2. The humane option is the best option. We are going to prioritize supporting each other as humans and having simple solutions that make sense for the sharing resources and communicating clearly.
3. Deadlines will have a certain amount of flexibility. My main "ask" is that you keep me informed.
4. We will foster intellectual nourishment, social connection, and personal accommodation. We will employ in person learning & on-line discussion as necessary to learn together and combat isolation.
5. We will continue to adjust to the situation. No one knows where this is going and what all we will need to adapt. Everyone needs support and understanding in this unprecedented moment.

### **For BIO50-991 students:**

Students taking the one-hour version of the Biology Capstone (50-991) should meet with their research mentors to plan out their Capstone Seminar Expectations and discuss responses needed to complete the Capstone form.

Points available for 991 students = 50

Points available for 994 students = 500

Based on the conversation with the Primary Research Mentor, students should complete this form by the end of the 2nd week of classes. Responses will be sent to the Primary Research Mentor, the Capstone Professor, and the Chair of the Biology Department.

- o Independent Research Form: <https://forms.gle/tfcEZ5WuDKXyrcu58>

Based on consensus from the faculty of the Biology Department:

- o The Capstone Paper collectively will represent 75% of the 1-hour course grade (~37.5 points) and the Primary Research Mentor will be responsible for assessing paper quality.
- o Oral Presentation will make up another 25% (~12.5 pts).
- o 991 students will also need to earn completion grades on the two reflections (Biology Major & Paideia) and participate fully in the Major Field Test Review.
- o Failure to complete either reflection successfully or participate fully in the MFT review will result in the loss of one letter grade.

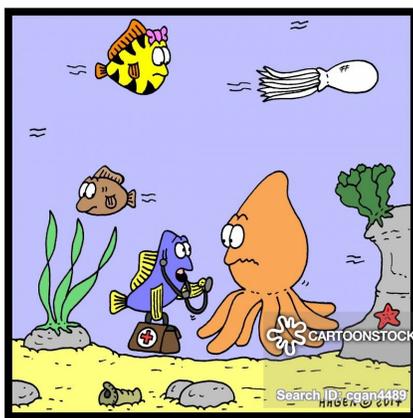
Therefore, to pass the course, BIO50-991 students must write an acceptable Paideia essay and Biology Reflection (completion grade only – may be return by Burks for revision as deemed necessary) pass the MFT and complete any additional tasks as outlined on the syllabus by the Capstone Professor, including attending class when required and Department Seminars.

Any additional Research in Biology (BIO50-97X) credit taken by the student will be graded by the Research Mentor with a different set of expectations outlined.

### What Everyone Can Expect:

1. To produce original work in this course.
2. To struggle to come up with a feasible research question.
3. To analyze some data and write a basic R script.
4. To rewrite everything.
5. To connect the dots across the subdisciplines of biology.
6. To foster your ability to sustain engaged discussion.
7. To critically think about how to present a story.
8. To work collaboratively with your peers to review core concepts in biology.
9. To reflect on your experience and identity as a biology major.
10. To create something about which you can be proud.

**My Goal:** My goal is that every student does well in this course and has a good experience in their biology capstone. Please come in to see me if you are having difficulty, or not doing as well as you would like in the course. Often, I can offer suggestions on how you can better prepare for class and be more effective in your writing.



You have to slow down and manage your stress level  
As you know, you are three times more likely  
than others to have a heart attack...

conquer your stress.



chibird

## **Course Learning Objectives:**

Biology capstone students should:

1. Demonstrate the ability to locate, critically evaluate, and summarize research literature on a specific biological topic.
2. Lead peer discussion and contribute constructively to discussion of scientific, primary research papers.
3. Give an engaging oral presentation of a biology research project, internship, literature review, grant proposal, or another relevant topic.
4. Write a scientific research or review paper for a scientific audience, which includes review and synthesis of primary literature.
5. Reflect on the biology experience at Southwestern University by completing the Biology Exit Survey and writing a reflection essay on their biology experience.
6. Demonstrate mastery of biology content by taking and passing the Major Field Exam in biology.
7. Discuss in a written essay insightful and meaningful connections among concepts from cellular/molecular, ecology, evolution and population courses. At least one connection must be between the areas of cell/molecular and population/ecology/evolution.
8. Understand the scientific process from hypothesis formation to support of conclusions.

**About the MFT:** As a group, students will identify a specific topic covered by the Major Field Test that warrants more focus within a subject area of Organismal Biology or Population Biology, Evolution and Ecology. Students will prepare a quick review sheet and design an interactive exercise (30-ish minutes) for class.

**Plans for the MFT are subject to change depending on the input from the Biology Dept.**

To pass the Biology Capstone course, students must also take and receive a passing grade on the Biology Major Field Exam. Students not reaching the expected minimum on the electronic exam will then meet with pertinent faculty for an oral exam on sections that did not meet the expected standard. In addition to the MFT, students must also complete the Biology Exit Survey to pass the course.

**994 Components:**

For specific Due Dates, see Moodle. Assignments are DUE on the DATE indicated.

1. **PARTICIPATION (50 pts total; 10%):**
  - o Individual 30 pts
  - o Group (MFT) 20 pts (completion)
2. **REFLECTIONS (50 pts total; 10%):**
  - o Conceptual Framework Reflection 10 pts - Due 2/1 by noon
  - o Biology Reflection 10 pts - Due 4/27 by class
  - o Paideia Reflection 20 pts - Due 4/27 by class
  - o Revision Reflection 10 pts - Due 5/1 with final paper
3. **PRESENTATIONS & DISCUSSION (150 pts total; 30%):**
  - o Slide Review & Talking pts 5 pts (completion)
  - o Cliff Notes PL Presentation 25 pts
  - o Cliff Notes PL Connections 30 pts (6/8; +1 optional)
  - o Proposal Presentation 15 pts (completion)
  - o Capstone Presentation 75 pts
4. **WRITING (250 pts total; 50%) +2 pts possible (x5) for immediate revision**
  - o **Due in February**
    - i. Proposal 15 pts
    - ii. Annotated Bibliography 1 20 pts
    - iii. Revised Question 5 pts
    - iv. Literature Review Methods 10 pts
    - v. Annotated Bibliography 2 20 pts
  - o **Due in March**
    - i. Introduction Scaffolding 10 pts (completion)
    - ii. Lit Review Written Results 10 pts
    - iii. Data & Statistical Plan 20 pts (completion)
  - o **Due in April**
    - i. Full 1st Draft 75 pts
      - 1. Overall effort 25 pts
      - 2. Lit Review Result Table 10 pts
      - 3. Introduction 20 pts
      - 4. Results 10 pts
      - 5. Abstract 10 pts
      - 6. Literature 10 pts
    - ii. Discussion 15 pts
  - o **Due in May**
    - i. Final Draft 50 pts

Course Grading Scale (percentage \* 500 for grade range; example 85% = minimum 425 points)

100-99 =	A+	83-86 =	B	70-72 =	C-	59-0 =	F
93-98 =	A	80-82 =	B-	67-69 =	D+		
90-92 =	A-	77-79 =	C+	63-66 =	D		

87-89 =	B+	73-76 =	C	60-62 =	D-		
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### **10 WAYS FOR ME TO BE A BETTER TEACHER (online but also in-person):**

From - <https://www.chronicle.com/article/how-to-be-a-better-online-teacher/>

1. **Show Up to Class** - I'll be there and I'll stay a few minutes for personal, in-person but socially distanced questions.
2. **Be Yourself** - No problem there - what you see is what you get. I'm very straight-forward and no nonsense.
3. **Put Yourself in Students' Shoes** - I get this. Shorter attention spans. A lot more to juggle. Pandemic fatigue. Will try to make the best of everything together.
4. **Organize Course Intuitively** - Ok. See Moodle. When in doubt, ask.
5. **Add Visual Appeal** - Not a problem here - will try to do with Figures.
6. **Explain Your Expectations** - Noted. Often do this verbally and also recap in Moodle Announcements and detail on Rubrics. Will have Q&A time.
7. **Scaffold Learning** - Keeping this in mind as I think of ways to build assignments and also connect between projects.
8. **Provide examples** - In terms of student work as a guide, I posted two examples of past capstones.
9. **Make Your Class An Inviting, Pleasant Place to Be** - Open to suggestions here.
10. **Commit to Continuous Improvement** - Absolutely - I consider all teaching an experiment with "tweaks" often needed.

**OPEN COMMUNICATION:** Students are expected to discuss questions and areas of concern with Dr. Burks. This is even more important during these unusual times. Please check your email on a regular (at least daily) basis.

**IN PERSON ETIQUETTE:** Be a good citizen and follow the rules.

- Mask always.
- Clean your desk area before class.
- Maintain 6 ft. social distance.
- Keep the desk arrangements as you find them.
- Bring a laptop (if this is a difficulty for you, let me know).
- Practice talking while masked. Note the volume required.
- Do not hesitate to ask someone to repeat themselves (me included).
- Be patient.

**ON-LINE ETIQUETTE:** Teaching part in-person and part-in on-line (called Hyflex) also represents a first. You can learn some more about Hyflex instruction here: <https://instructionalcontinuity.georgetown.edu/pedagogies-and-strategies/hybrid-hyflex-teaching/>

**Please take a look at this site for a sense of the desired learning environment.**

You may experience a time when you need to be remote.

**Due to covid testing and then my own personal circumstances, we will have the first three weeks of class using Google Meets.**

1. Typical class periods will start in person at 8:35 am in Cullen 330 and last for only one hour..
2. If we use Google Meets, we will use the whole class (8:30 am - 9:45 am)
3. Google Meet link is permanent.
4. All materials or links for class will be posted on Moodle.
5. We can record class meetings as needed.
6. Official class emails will come from Moodle.
7. All students should try their best to keep their cameras "on" during class. It makes you more accountable. *I understand that some privacy issues may prevent this from occurring and can respect those circumstances. If you do not want to have class in your personal space, I'd prefer you reserve a room in the library. In those cases of no camera, students will need to make additional efforts to show engagement (in chat for example). Exceptions for on-camera time may include unexpected interruptions, needed restroom breaks, etc...*
8. Generally microphones should be "muted" by students to limit external noise/feedback. However, students should always feel free to "unmute" and interrupt or ask questions. Dr. Burks will generally maintain her microphone unmuted.
9. Students will be expected to engage in the chat, especially when asked for check-ins from Dr. Burks. Individual chats can also be sent.
10. Any technical difficulties, please text 512 869 8098.

**LATE WORK/FLUID DEADLINES:** I will try to be as fluid as possible with deadlines. However, please note that if no deadlines exist, then everyone will procrastinate. If you anticipate not meeting a deadline for legitimate reasons, please ask for an extension **at least 24-hours in advance.**

**EMAIL:** I will frequently e-mail to remind you of deadlines or to clarify points from a lecture. Please check daily.

**MOODLE:** Southwestern uses an interactive course management system called Moodle. We will use Moodle to share materials, track grades, and often submit assignments. You should automatically be loaded into the system and can access Moodle via the SU Portal or directly at [lms.southwestern.edu](https://lms.southwestern.edu). Your username and password is your regular SU electronic ID (same as your email). With any technological application, sometimes things can go awry. Melanie Hoag ([hoagm@southwestern.edu](mailto:hoagm@southwestern.edu), x1644) can be of assistance with any Moodle difficulties.

**ATTENDANCE:** A lot of effort has been made to conduct in-person classes at Southwestern. In general, I encourage you to attend class whether in person or on-line **BUT ONLY ATTEND CLASS IF AND ONLY IF YOU FEEL GOOD. WHEN IN DOUBT, STAY HOME.**

**Please note:**

- Attendance records will be kept for in-person classes for contact tracing - you will **enter your attendance weekly on Moodle** (near top of class page). .
- **Attendance itself is not directly part of your grade.** Your engagement and participation will largely be assessed through your interactions in class.
- If you think you may have had close contact with an infected person, begin quarantine in your own room immediately and call the COVID-19 Care Coordinator at 512-863-1605.
- If you develop any symptoms of COVID-19 (esp. fever, cough), call the SU Health Center at 512-863-1252 to schedule an appointment.
- If you need assistance in getting medical care, contact your Resident Assistant or SUPD at 512-863-1944.
- Do your best to communicate with me.
- Designate a peer to communicate updates if that is easier.
- Do not worry about missing class if necessary. I promise to work individually with everyone on a case-by-case basis.

**SELF-CARE:** College life is great, but also stressful and demanding, especially now.. College life under the umbrella of covid is a new frontier. Keep in mind that **nothing is as important as you and your support system.** Take care of yourself first and then you can be there to help others.

**Some Self-Care Basics**

- Prioritize
- Stick to a routine
- Don't skimp on the basics (eat, sleep, move)
- Stay connected
- Limit news consumption
- Be mindful of substance use
- Practice mindfulness and other relaxation techniques
- Cut yourself some slack
- Watch for signs of trouble in yourself
- Check in with friends and other supporters

Reference: <https://www.apa.org/monitor/2020/07/self-care>

**HONOR CODE:** You must complete all work independently unless otherwise noted by Dr. Burks. As all work will be electronic, you must type out the honor pledge IN FULL on all assignments.

*I have acted with honesty and integrity in producing this work and am unaware of anyone who has not.*

Please take responsibility for taking care of this; I will not chase you down if you forgot the pledge. On electronic submissions, you must have it on your submission (the best practice is to place in the Heading followed by your initials). If you are unclear on the concept of plagiarism or cannot sign the honor code in good faith, please see Dr. Burks. When in doubt, paraphrase and cite the [BIOLOGY CITATION GUIDE](#). Any perceived impropriety will be discussed with the student and appropriate action taken. **All citations in this course should use Ecology style.**

**SUBMITTING ASSIGNMENTS:** Moodle/Google Drive. I cannot open ".pages" documents on Moodle. Please make sure to always make your documents open-able by MS Word or Adobe PDF on a PC platform. Save them with .doc or .docx extensions, ideally. The majority of your writing should take place in your Capstone Google Doc so that I can easily comment on them.

**WRITING HELP:** Besides feedback from your peers and myself, Southwestern provides a number of resources aimed at improving your writing including the [Debby Ellis Writing Center where individual consultation appointments are available.](#)

**FACEBOOK/SOCIAL MEDIA POLICY:** All official class information goes through Moodle or myself to your SU email. If someone wants to take the initiative to make a group, I am in favor of group studying and brainstorming. I'm happy to be "A Friend" with SU students with the knowledge that I am a faculty member at Southwestern first and take that seriously. If I see something that worries me, I will follow up. I believe in better safe than sorry. At the same time, I'm certainly not in the habit of checking up on students but cannot help but read updates when posted. My Profile page is all- inclusive for my friends, family and some students. I do not post anything there that I am not willing to publicly share (this is good advice). So, if you would like to request to be my friend, I will certainly accept but I do not want to compel people. As another social media alternative, you can follow me on Twitter @ProfRomi.

### **ACCOMMODATIONS:**

All of us learn in slightly different ways and I try to design my courses so that there are multiple means of accessing class information, multiple ways to take part in class activities, and multiple avenues for being assessed on class work. If there are circumstances that may affect your performance in this class, please let me know as soon as possible so that we can work together to develop strategies for adapting assignments to meet both your needs and the requirements of the course. If you have documented disabilities, keep reading.

*Southwestern University will make reasonable accommodations for persons with documented disabilities. Students should contact the Center for Academic Success and Records to determine their eligibility to receive accommodations."*

Official accommodation notification should be communicated as soon as reasonably possible. Beyond this, we all need some version of accommodations to make our class space accessible, because we all learn in different ways. Please feel free to manage your classroom experience in the way best for you. Reasonable requests will always be carefully considered for feasibility and equity.

- ❑ Library and Academic Support services - [Academic Success website](#) and the "[Support During COVID-19](#)" section of that website.
- ❑ Technical / computer help support services - Students can receive technical support through the InfoDesk. They can call the support line (512.819.7333) or send an email to [infodesk@southwestern.edu](mailto:infodesk@southwestern.edu). Support is available M-F, 8-12 and 1-5.
- ❑ Counseling / health support services - See [Counseling Center's](#) website.

**GROUP WORK:** All students are expected to contribute equally to group or pair projects.

**FOOD:** Please avoid eating anything during in-person class (in class - you can sip water) and be reasonable during on-line parts of class.

**AFTER CLASS:** In early March, I will start to teach Ecology Methods directly after Capstone. Therefore, we must end class on time and I will not be available for questions immediately after class. Please feel free to contact me for some face time. I'm teaching only Tuesday and Thursday mornings and Tuesday afternoon (Methods lab), but am otherwise reasonably flexible.

**Moodle Syllabus Statement:** After reading the syllabus, please mark important dates on calendars (exam, drop date, presentation) and COMPLETE THE SYLLABUS CHECK by typing in "I have read the syllabus and understand the expectations." By entering this, I know that you understand:

1. The expectations for success in Biology Capstone are abundantly clear.
2. Students can make an appointment with Dr. Burks if times conflict.
3. All your questions about the syllabus have been answered.
4. Students will first consult syllabus and then clarify with Dr. Burks.

**All students designate a “peer friend” that they can text if Burks unresponsive.**

**WHAT TO DO IF:**

**Google Meet Link doesn't work:**

- Try clicking from a different source (syllabus, Moodle, Google Calendar)
- Send Burks an email for a new invitation.
- Send your “peer” friend a text to let Burks know you need an invite

**If your camera or microphone doesn't work:**

- Double check that you clicked the right buttons
- Send Burks a Chat message in Google Meets
- Exit out of Google Meets and come back in

**If Burks disappears or has technical difficulty:**

- Check the Google Meets chat
- Check your email for a Moodle Announcement
- If you can continue without Burks, do so. If the issue is not resolved within 15 minutes, then work independently for rest of class time

**If you cannot see a screen “shared” by someone or you cannot hear them:**

- Let them know - either in chat or verbally

**If you need to take a break:**

- If possible, send a quick Chat message that says 'brb' (be right back)
- Turn off your camera
- Return and make sure you are muted

**If you lose power and cannot participate remotely:**

- If possible, send a text to Burks (512 869 8098) and let your “peer friend” know. Follow-up when able.